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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: LOWLES, Robert, J.
Serial No.: 10/787,173
Filed: February 27, 2004
Title: HOLSTER FOR SUPPORTING AND CHARGING THE WIRELESS
HEADSET OF HANDHELD DEVICES
Group: 3727
Examiner:
Attorney Ref.: PAT 53955-2 US

September 22, 2004

Commissioner for Patents
U.S. Patent and Trademark Office
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Dear Sir:

SUBMISSION OF CERTIFIED PRIORITY DOCUMENT UNDER 35 U.S.C. § 119

Transmitted herewith is a certified copy of Great Britain Patent Application No. 0318357.1, filed August 5, 2003, in the name of Research In Motion Limited, the foreign priority of which is claimed under 35 U.S.C. § 119, in respect of U.S. Patent Application No. 10/787,173.

Submission of the certified copy of the above priority document satisfies all of the requirements of 35 U.S.C. § 119. The right of foreign priority should therefore be accorded to the present U.S. application.

No fee is believed due. However, if a fee is due, please charge or credit Deposit Account No. 501593.

Respectfully submitted,
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1. Certified Copy GB Appln. No. 0318357.1

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the undersigned, being an officer duly authorised in accordance with Section 74(1) and (4) of the Deregulation & Contracting Out Act 1994, to sign and issue certificates on behalf of the Comptroller-General, hereby certify that annexed hereto is a true copy of the documents as originally filed in connection with the patent application identified therein.

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Request for grant of a patent



1/77

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1. Your reference	JFW/44522GB1
2. Patent application number	0318357.1 - 5 AUG 2003
3. Full name, address and post code of the or each applicant	Research In Motion Limited 295 Phillip Street Waterloo N2L 3W8 ON Canada Patents ADP number If the applicant is a corporate body, give the country/state of its incorporation Ontario, Canada 8605396001
4. Title of the invention	Holster for Supporting and Charging a Wireless Peripheral of a Mobile Device
5. Name of your agent	VENNER, SHIPLEY & CO 20 LITTLE BRITAIN LONDON EC1A 7DH 1669004 ✓ Kilburn & Shrode 20 Red Lion Street London WC1R 4RJ global
6. If you are declaring priority from one or more earlier patent applications, give the country and the date of filing of the or each of these earlier applications and the or each application number	Country Priority application number Date of filing
7. If this application is divided or otherwise derived from an earlier UK application, give the number and filing date of the earlier application	Number of earlier application Date of Filing



- Is a statement of inventorship and of right to grant of a patent required in support of this request? (Answer 'YES' if:
a) any applicant in 3. above is not an inventor, or
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Description	8
Claim(s)	2 DL
Abstract	1
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Priority documents

Translations of priority documents

Statement of inventorship and right to grant of a patent (Patents Form 7/77) One

Request for preliminary examination and search (Patents Form 9/77) One

Request for substantive examination (Patents Form 10/77)

Any other documents

11. I/We request the grant of a patent on the basis of this application.

Signature

Date

Jan Walaski

5 August 2003

12. Name and daytime telephone number of person to contact in the United Kingdom
- Jan Walaski
020 7600 4212

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DUPLICATE

HOLSTER FOR SUPPORTING AND CHARGING A WIRELESS PERIPHERAL OF A MOBILE DEVICE

FIELD OF THE INVENTION

[0001] The present invention generally relates to holsters for mobile devices and their peripherals. More particularly, the present invention relates to a structure for supporting peripherals to allow them to be charged by the mobile device.

BACKGROUND OF THE INVENTION

[0002] Peripheral devices are increasingly used in conjunction with mobile electronic devices. Wireless headsets, for example, add functionality to cellular phones. Additionally, an increasing number of portable digital cameras are designed to interact with cellular phones and personal digital assistants.

[0003] It is well known that peripheral devices are subject to the competing requirements of power and size. There is an increasing demand for peripheral devices having a long-lasting power supply. Additionally, there is a desire to minimise peripheral size, which results in smaller batteries. Peripherals often use a lithium ion or a nickel metal hydride batteries as their power supply to provide long life, low weight, and rechargeability. Charging the batteries of a peripheral device often involves docking the batteries, possibly within the peripheral, in a charger connected to a power source such as an electrical outlet or a motor vehicle battery. Consequently, a user's enjoyment of a peripheral is limited by having to be at home, in the office, or in the car to charge the peripheral. This also results in the user having to manage the charging of two separate devices, the main unit and the peripheral device.

[0004] Peripherals and mobile devices are typically carried in carrying cases rather than holsters. Carrying cases have several pockets whereas holsters typically have a sleeve. Although the smaller size of holsters makes them desirable for holding peripherals, holsters are normally designed to hold only one item at a time, either a mobile device or a peripheral. Carrying cases hold peripherals in pockets which are closed using a fastener such as a zipper or hook and loop fastener such as those made by VelcroTM. Retrieving the peripheral entails fiddling with the fastener of a carrying case, which is cumbersome.

SUMMARY OF THE INVENTION

[0005] According to a first aspect of the invention, a holster for receiving and retaining a mobile device in a sleeve and a peripheral device comprises a mating structure for releasably holding the peripheral device in electrical contact with the mobile device retained in the sleeve so as to permit the mobile device to charge the peripheral device.

[0006] Other aspects and features of the present invention will become apparent to those ordinarily skilled in the art upon review of the following description of specific embodiments of the invention in conjunction with the accompanying figures.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] Embodiments of the present invention will now be described, by way of example only, with reference to the attached Figures, wherein:

Figure 1A illustrates a side view of the holster according to an embodiment of the present invention;

Figure 1B illustrates a front view of the holster of Figure 1A;

Figure 1C illustrates a top view of the holster of Figure 1A;

Figure 2A illustrates a side view of the holster and a mobile device according to an embodiment of the present invention;

Figure 2B illustrates a front view of the holster and device of Figure 2A;

Figure 3A illustrates a side view of the holster retaining the mobile device according to an embodiment of the present invention;

Figure 3B illustrates a front view of the holster and device of Figure 3A;

Figure 4A illustrates a side view the peripheral device with a holster retaining the mobile device according to an embodiment of the present invention;

Figure 4B illustrates a front view of the peripheral device in Figure 4A;

Figure 4C illustrates a top view of the peripheral device in Figure 4A;

Figure 5A illustrates a side view of the holster retaining the mobile device and peripheral device according to the first embodiment of the present invention;

Figure 5B illustrates a top view of the holster and peripheral device of Figure 5A;

Figure 6A illustrates a side view of a holster according to an embodiment of the present invention;

Figure 6B illustrates a front view of the holster of Figure 6A;

Figure 7 illustrates a side view of a mobile device and a holster of an embodiment of the present invention;

Figure 8 illustrates a side view of the holster retaining the mobile device according to an embodiment of the present invention;

Figure 9A illustrates a side view of a mobile device held by a holster and aligned to receive peripheral device;

Figure 9B illustrates a front view of the mobile device, holster and peripheral device of Figure 9A;

Figure 10 illustrates a side view of the holster retaining a mobile device and the peripheral device with its arm rolled out according to an embodiment of the present invention;

Figure 11 illustrates a side view of the holster retaining a mobile device and a peripheral device according to an embodiment of the present invention;

Figure 12A illustrates a side view of a mobile device and a holster retaining a mobile device and a peripheral device according to an embodiment of the present invention;

Figure 12B illustrates the electrical connector in the holster of Figure 12A;

Figure 13 illustrates an electrical connection for use in the holster of Figure 12A.

DETAILED DESCRIPTION

[0008] Generally, a holster for holding both a peripheral device and a mobile device is provided. More specifically, the holster holds both a mobile device and a peripheral device to permit the mobile device to charge the peripheral device.

[0009] Typically, users of peripheral devices such as wireless headsets or digital cameras that interface with a mobile device must carry a mobile charging station with them. This results in a net increase in the number of items a user is required to carry. Systems in accordance with aspects of the present invention negates the need to carry a

mobile charging station by providing a holster to hold both the mobile device and the peripheral device, so that they are in electrical contact with each other, allowing the peripheral device to recharge its battery from the mobile device. Due to size related issues, peripheral devices typically have smaller batteries than mobile devices, and shorter battery lives. By allowing a peripheral device to be charged by a mobile device while both devices are idling, the peripheral device is given an effectively longer battery life. In a presently preferred embodiment, the holster supports the peripheral device in such a way that when the peripheral is held for charging, the mobile device can be removed for use while the peripheral device remains securely retained by the holster.

[0010] Figure 1A shows a side view of a holster according to an embodiment of the present invention. Holster 20 has a back panel, a base portion 27, and side wall portions 26 which define sleeve 22 designed for receiving a mobile device. Also illustrated in Figure 1A is a mating structure 24 in side wall 26 to allow a peripheral device to mate with a holster. One skilled in the art will readily appreciate that there are a number of implementations for such a mating device. These may include grooves with bosses or flanges to retain a mobile device after it is slid into place, magnets, or other physical means of engaging a peripheral device. Figure 1B shows a front view of the holster illustrated in Figure 1A. Holster 20 has two side walls 26 each having its own mating structure 24, the side walls 26 helping to define the sleeve 22. Figure 1C illustrates the top view of the holster of the Figures 1A and 1B. As can be seen from Figure 1C, holster 20 has a sleeve 22 defined by side walls 26. Each side wall 26 has a mating structure 24. Examples of mating structures include retaining brackets, magnets, tabs, latches, flanges, hooks, clamps, and tongue-and-groove assemblies. Additionally, one skilled in the art will appreciate that in place of mating structure 24 there can be offered a peripheral sleeve adjacent to the sleeve 22 for holding the mobile device.

[0011] Figure 2A illustrates a side view of the holster of Figure 1, and a mobile device 28 for being retained in the sleeve. Mobile device 28 has a charger 30 connected to a charging port 32. Figure 2B illustrates the mobile device 28 and holster 20 from a front view. Figures 3A and 3B provide side and front views respectively of mobile device 28 contained in the sleeve of holster 20. As can be seen from Figures 3A and 3B, the sleeve retains mobile device 28 so that charger 30, and charging port 32 are accessible from the

front opening of the holster defined by the side walls 26. Additionally, mating structure 24 is aligned so that a peripheral device will be held on holster 20 so that it has access to both charging port 32 and charger 30.

[0012] Figure 4A illustrates a side view of a peripheral device 34 and holster 20 retaining mobile device 28. Peripheral device 34 has two mating structure 35 and a charging contact 42. As shown in Figures 4B and 4C, mating structure 35 and charging contact 42 are accessible from the front of peripheral device 34. Mating structures 35 and 24 are located so that they can connect. Charging contact 42 is positioned such that connecting mating structures 35 and 24 brings charging contact 42 in electrical contact with charging port 32.

[0013] Figures 5A and 5B provide side and top views of peripheral device 34 mated with holster 20 and held in electrical contact with mobile device 28. Holster 20 holds mobile device 28 in its sleeve as previously described. Peripheral device 34 uses its mating structures 35 to mate with mating structure 24 on holster 20. Upon connection of mating structure 24 with mating structure 35, charging contact 42 of peripheral device 34 is placed in electrical contact with charging port 32. This allows a direct electrical contact between peripheral device 34 and mobile device 28. Mobile device 28 using charger 30 and charging port 32, which in various embodiments may be integrated into a single element, provides an electrical current to peripheral device 34 through charging contact 42. This current is used to charge the battery of peripheral device 34. One skilled in the art will readily appreciate that there are a plurality of designs for a charging unit to allow one battery-powered device to charge another. As a result, charger 30 of the mobile device 28 is able to charge peripheral device 34, while peripheral device 34 is connected to holster 20.

[0014] In one presently preferred embodiment, peripheral device 34 is a wireless headset for use with a mobile device providing voice services. Thus, a headset for use with a mobile device such as a cellular phone can be recharged by the mobile device, instead of requiring either a dedicated charger, or a desktop or vehicle charger. This allows the design of peripheral device 34 to minimize the volume and weight of a battery, while still providing an effectively long battery life. In another embodiment peripheral device 34 is a camera, and it benefits from the same advantage previously described.

[0015] Figure 6A illustrates a second embodiment of the present invention. There are cases where it is preferable that the peripheral device charges off the mobile device through the base of the holster. For example, holsters designed to retain a mobile device under rigorous movement include a supporting wall between side walls and located opposite the back panel. Unfortunately, the supporting wall prevents a peripheral device from making electrical contact with a mobile device. One of skill in the art will appreciate that holster designs may arise where it is preferable that charging occurs through the base of the holster.

[0016] Figure 6A shows a side view of a holster of the second embodiment of the present invention. Holster 20 has a back panel, side walls, and a base 27. The side walls, back panel and base 27 define sleeve 22 for retaining a mobile device. Base 27 also includes a mating structure 24 for securing to a peripheral device. Base 27 of holster 20 has an aperture 36 to allow a peripheral device to make electrical contact directly with the mobile device held by sleeve 22. Figure 6B provides a front view of the holster illustrated in Figure 6A. Holster 20 has a back panel, a sleeve 22 defined by the back panel, side walls, and base 27. In base 27 is a mating structure 24 for securing a peripheral device, and an aperture 36 to allow the peripheral device secured by mating structure 24 to make electrical contact with the mobile device held by sleeve 22.

[0017] Figure 7 illustrates the holster illustrated in Figures 6A and 6B aligned to receive a mobile device 28. Mobile device 28 has charger 30 and charging port 32 located at its base to align with aperture 36.

[0018] Figure 8 illustrates mobile device 28 held in the sleeve of holster 20 with charging port 32 and charger 30 aligned with aperture 36.

[0019] Figure 9A illustrates a side view of peripheral device 34 having a retractable, or hideable arm 40. Arm 40 can be retracted, or in the presently illustrated embodiment rotated into the body of peripheral device 34 so that while in use it is not exposed. Figure 9B illustrates a front view of peripheral device 34, and mobile device 28 held in the sleeve of holster 20. One skilled in the art will appreciate that the charging port and charger of the mobile device 28 are aligned with the aperture in the base of holster 20.

[0020] Figure 10 illustrates a side view of the holster 20 holding mobile device 28 in its sleeve such that charger 30 and charging port 32 are in alignment with aperture 36,

and holster 20 is aligned with peripheral device 34 to allow peripheral device 34 to mate with the holster 20. To mate with holster 20 peripheral device 34 engages mating structure 24 with its mating structure 35 to provide a physical connection between holster 20 and peripheral device 34. Additionally, arm 40 is in an exposed position such that a tongue 37 can be inserted into aperture 36 so that a charging contact 42 of peripheral device 34 is aligned to make contact with electrical contact 32 of mobile device 28.

[0021] Figure 11 illustrates the engagement of peripheral device 34 with holster 20. Mating structures 24 and 35 provide a secure fastening of peripheral device 34 to holster 20. As described above, this attachment can be made using a number of known fasteners, including magnetic fastening. Charging contact 42 is in electrical contact with charging port 32 of mobile device 28 such that charger 30 can provide an electrical current to peripheral device 34 to recharge the batteries of the peripheral device. As discussed above, this provides a longer effective battery life for the peripheral device, while allowing the peripheral device 34 to carry a small capacity battery.

[0022] Figure 12A illustrates an alternate embodiment to the present invention, wherein charging contact 42 is put in electrical connection with charging port 32 but not in direct physical or electrical contact. Instead, charging contact 42 is placed in electrical contact with holster-peripheral terminal 48 of holster 20. Holster-peripheral terminal 48 is electrically connected to holster-mobile terminal 46 which is in electrical contact with the charging contact of mobile device 28. Thus, holster 20 provides an indirect electrical contact to allow mobile device 28 to charge peripheral device 34. The electrical connector 44 of holster 20 is illustrated in Figure 12B, where holster-peripheral terminal 48 is in electrical contact with holster-mobile terminal 46 and is connected thereto by lead 50.

[0023] One skilled in the art will readily appreciate that a number of alternate embodiments of the present invention can be provided such as that illustrated by Figure 13. In Figure 13 the indirect electrical connection 44 contains controller 52 which allows charging of the peripheral device from mobile device 28 only if the battery capacity of mobile device 28 exceeds a predefined level. Controller 52 prevents mobile device 28 from being drained by peripheral device 34 below a desired threshold. One skilled in the art will readily appreciate that this control structure could be placed in either peripheral

device 34 or mobile device 28 as alternate designs, and configured to provide further charging control functions.

[0024] Although not explicitly shown in the drawings, it will also be appreciated that a peripheral device and a mobile device incorporate one or more compatible communication interfaces. In one embodiment, the mobile device communicates with the peripheral device on a BluetoothTM communication channel, enabled by Bluetooth modules in the mobile device and the peripheral device. "Bluetooth" refers to a set of specifications, available from the Institute of Electrical and Electronics Engineers (IEEE), relating to wireless personal area networks. Other types of communication interfaces, including Infrared Data Association (IrDA) ports or surface acoustic wave (SAW) technologies, for example, are also contemplated. Further, like the electrical connection between a mobile device and a peripheral device described above, a communication channel may be direct or indirect. For an indirect communication channel, the holster incorporates a holster-to-peripheral device interface compatible with an interface in the peripheral device and a holster-to-mobile device interface compatible with an interface in the mobile device. The interfaces between the holster and the peripheral device need not necessarily be the same as or compatible with the interfaces between the holster and the mobile device. Where these interfaces are not compatible, the holster further includes a communication controller or translator to enable communication between the incompatible holster-to-peripheral device and holster-to-mobile device interfaces.

[0025] The above-described embodiments of the present invention are intended to be examples only. Alterations, modifications and variations may be effected to the particular embodiments by those of skill in the art without departing from the scope of the invention, which is defined solely by the claims appended hereto.

What is claimed is:

1. A holster for receiving and retaining a mobile device in a sleeve and a peripheral device, the holster comprising:
a mating structure for releasably holding the peripheral device in electrical contact
5 with the mobile device retained in the sleeve so as to permit the mobile device to charge the peripheral device.
2. The holster of claim 1, wherein the mobile device has a charging port, the peripheral device has a charging contact and a mating structure, and the holster mating structure connects with the peripheral device mating structure to releasably hold the
10 peripheral device so that the charging port is in electrical contact with the charging contact to allow the mobile device to charge the peripheral device.
3. The holster of claim 2, wherein the charging port is in direct electrical contact with the charging contact.
4. The holster of claim 2, wherein the charging port is in electrical contact with the
15 charging contact through an electrical connector housed in the holster.
5. The holster of claim 4, wherein the electrical connector includes a controller for regulating charging.
6. The holster of claim 2, further including a base for supporting the mobile device in the sleeve, the base having an aperture for receiving the charging contact and allowing it
20 to make electrical contact with the charging port.
7. The holster of claim 1, wherein the mating structure is selected from the group consisting of a retaining bracket, a magnet, a tab, a latch, a flange, a hook, a clamp, a friction fit, and a tongue and groove.
8. The holster of claim 1, wherein the mobile device is a cellular phone and the
25 peripheral device is a wireless headset for interaction with the cellular phone.

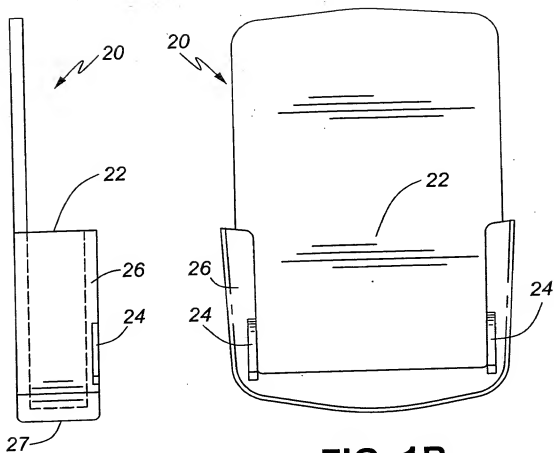
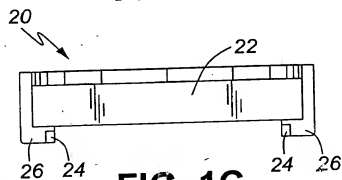
9. The holster of claim 8, wherein the mobile device communicates with the peripheral device on a Bluetooth communication channel.

10. The holster of claim 1, wherein the mobile device is a cellular phone and the peripheral device is a camera for interaction with the mobile phone.

ABSTRACT

A holster for use with a mobile device and a peripheral device is disclosed herein. The holster provides a mating structure for holding a peripheral device so that a mobile device charges the peripheral device. The holster removes the inconvenience of having to charge a peripheral through a battery charger at work or home by permitting the peripheral to charge from the mobile device. The holster can be used with any mobile device and peripheral device, such as a cellular phone and a wireless headset.

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**FIG. 1A****FIG. 1B****FIG. 1C**

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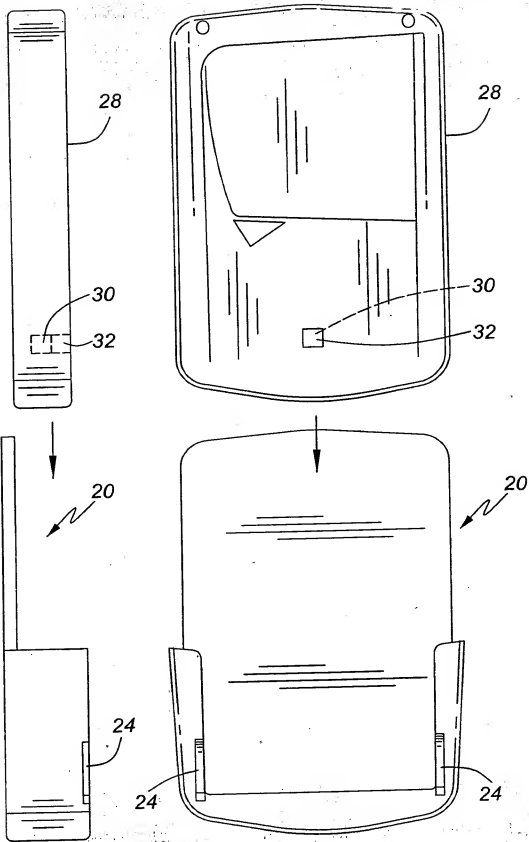
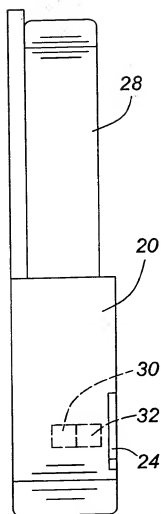
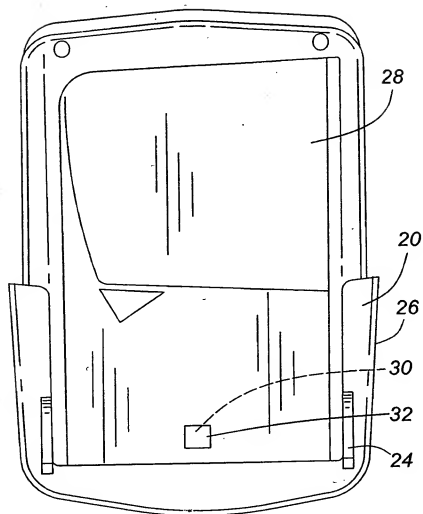


FIG. 2A

FIG. 2B

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**FIG. 3A****FIG. 3B**

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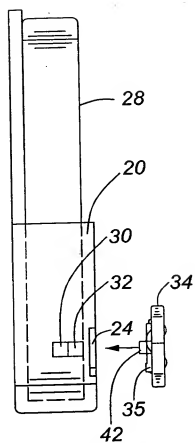


FIG. 4A

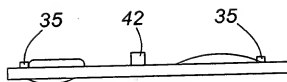


FIG. 4C

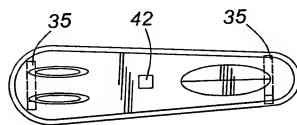
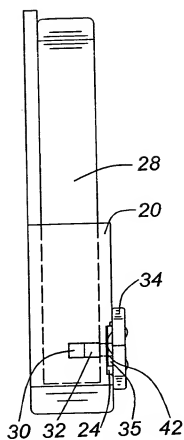
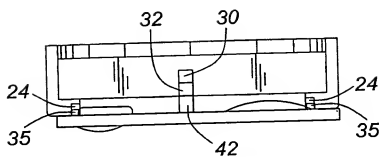
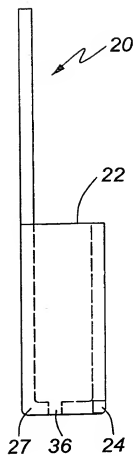
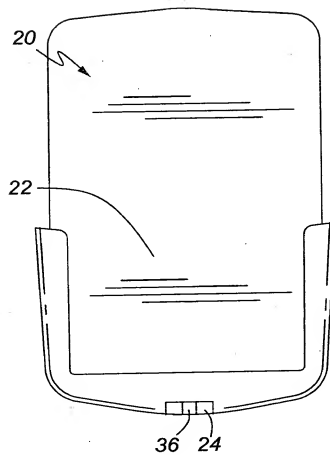


FIG. 4B

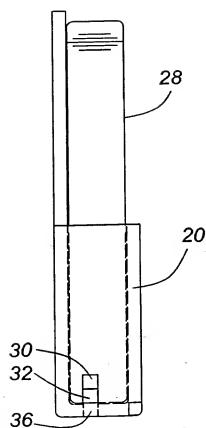
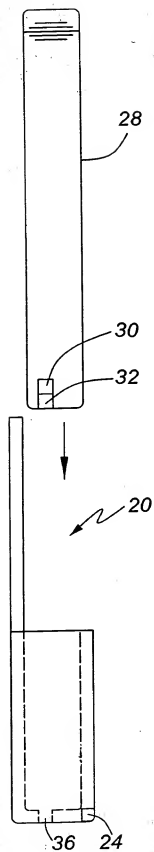
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**FIG. 5A****FIG. 5B**

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**FIG. 6A****FIG. 6B**

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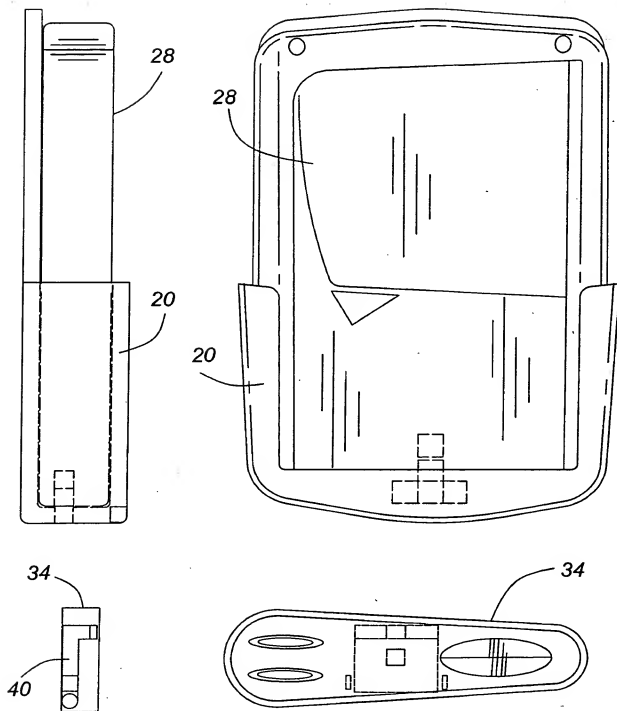
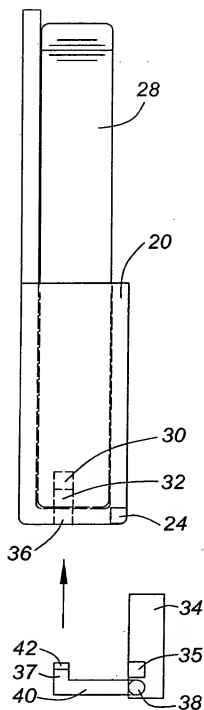


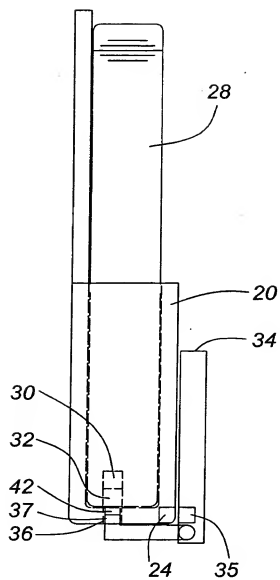
FIG. 9A

FIG. 9B

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**FIG. 10**

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**FIG. 11**

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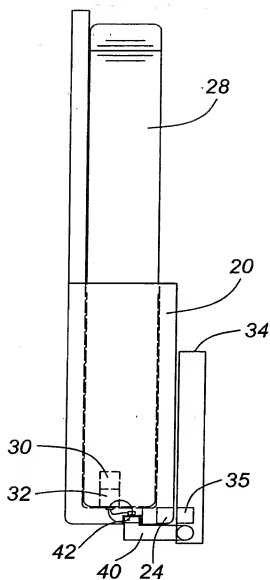


FIG. 12A

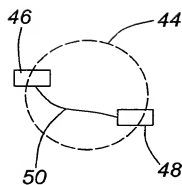


FIG. 12B

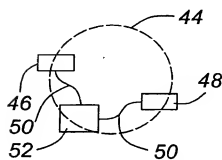


FIG. 13

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